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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

NGUYEN, TOAN D

ART UNIT

PAPER NUMBER

2416

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/691,704	Applicant(s) JANG, BOG HYUN	
	Examiner TOAN D. NGUYEN	Art Unit 2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 April 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-3 and 6 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

2. Claims 1-3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, recites the limitation "the real number" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nowara (US 5,974,087) in view of Elezabi et al. (US 7,035,317) further in view of the applicant's admitted prior art (AAPA).

For claim 1, Nowara discloses waveform quality measuring method and apparatus, comprising:

(a) dividing synchronous-code data into a first part and a second part (figure 6, reference S3, col. 6, lines 61-62);

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(b) dividing baseband data into a first part and a second part (figure 6, reference S2, col. 6, lines 57-60);

(c) generating a first correlation value based on multiplication of one of the first .part or the second part of the baseband data and only the first part PN sequence of the synchronous code data (figure 6, references S4 and S5, col. 6, line 63 to col. 7, line 9);

(d) detecting whether the first correlation value is greater than a preset threshold value (figure 6, reference S6, col. 7, lines 10-11); and

(e) determining a synchronous position based on (d) if the first correlation value is greater than the preset threshold value (figure 6, reference S17, col. 7, lines 49-51).

However, Nowara does not expressly disclose:

(c) generating a first correlation value based on multiplication of one of the first .part or the second part of the baseband data and only the real number of the synchronous code data; and

(f) synchronizing a mobile station and base station based on the synchronous position determined in (e), wherein the mobile station performs initial cell retrieval using a single filter based on the synchronization obtained in (f).

In an analogous art, Elezabi et al. disclose:

(c) generating a first correlation value (figure 1, multiplier 104) based on multiplication of one of the first .part or the second part of the baseband data (figure 1, reference $r(n)$) and only the real number (figure 1, reference y_k) of the synchronous code data (figure 1, reference $(PN)_k$, col. 4, lines 47-56).

One skilled in the art would have recognized the generating a first correlation value based on multiplication of one of the first part or the second part of the baseband data and only the real number of the synchronous code data, and would have applied the Elezabi et al.'s multiplier 104 in Nowara's correlation step. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Elezabi et al.'s single-user decoder metrics for subtractive interference cancellation detectors in- code-division multiple-access (CDMA) communication systems with time dependence variance residual multiple-access interference (RMAI) in Nowara's waveform quality measuring method and apparatus with the motivation being to output of the multiplier as a real number y_k (col. 4, line 54).

Furthermore, Nowara in view of Elezabi et al. does not expressly disclose:

(f) synchronizing a mobile station and base station based on the synchronous position determined in (e), wherein the mobile station performs initial cell retrieval using a single filter based on the synchronization obtained in (f).

The applicant's admitted prior art (AAPA) discloses (f) synchronizing a mobile station and base station based on the synchronous position determined in (e), wherein the mobile station performs initial cell retrieval using a single filter based on the synchronization obtained in (f) (figure 1, page 1, lines 1-12).

One skilled in the art would have recognized the synchronizing a mobile station and base station based on the synchronous position determined in (e), wherein the mobile station performs initial cell retrieval using a single filter based on the synchronization obtained in (f), and would have applied the AAPA in Nowara's

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synchronization. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use the AAPA in Nowara's waveform quality measuring method and apparatus with the motivation being to provide the initial cell retrieval method (page 2, line 1).

For claim 2, Nowara discloses wherein if the first correlation value is greater than the preset threshold value, then:

reading additional baseband data and synchronous code data (figure 6, reference S7, col. 7, lines 12-13);

performing (a)-(c). for the additional baseband and synchronous code data (figure 6, reference S8, col. 7, lines 14-15);

determining whether a second correlation value generated based on the additional baseband and synchronous code data is greater than the present threshold value (figure 6, reference S14, col. 7, lines 34-37);

determining which of the first or second correlation values is a maximum value (figure 6, reference 15, col. 7, lines 39-43); and

determining a baseband data position based on the maximum correlation values, the synchronous position corresponding to or being based on the baseband data position (figure 6, reference S17, col. 7, lines 49-51).

For claim 3, Nowara discloses wherein, in (c), the first correlation value is generated based on multiplication of the first part operation of the baseband data and the first part of the synchronous code data, the first parts corresponding to real number units of the baseband data and the synchronous code data (col. 15, lines 55-57).

For claim 6, Nowara discloses waveform quality measuring method and apparatus, comprising:

extracting baseband data by dividing it into block unit (figure 6, reference S2, col. 6, lines 57-60);

generating a correlation value base on the extracted baseband data and synchronous code data (figure 6, reference S5, col. 6, line 65 to col. 7, line 9);

detecting whether the correlation value is greater than a preset threshold value (figure 6, reference S6, col. 7, lines 10-11);

if the correlation value is greater than the preset threshold value, then multiplying adjacent data which either precedes or follows the extracted baseband data by only a first partial PN sequence of the synchronous code data (figure 6, references S4, and S7-S8, col. 6, lines 63-64, col. 7, lines 12-15, and col. 8, lines 10-37);

determining a synchronous position based on a result of said multiplication (col. 8, lines 45-46).

However, Nowara does not expressly disclose:

multiplying adjacent data which either precedes or follows the extracted baseband data by only a real number unit of the synchronous code data; and

wherein a mobile station and base station are synchronized based on said synchronous position, the mobile station performing initial cell retrieval using a single filter based on said synchronization.

In an analogous art, Elezabi et al. disclose:

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multiplying (figure 1, multiplier 104) adjacent data which either precedes or follows the extracted baseband data (figure 1, reference $r(n)$) by only a real number unit (figure 1, reference y_k) of the synchronous code data (figure 1, reference $(PN)_k$, col. 4, lines 47-56).

One skilled in the art would have recognized the multiplying adjacent data which either precedes or follows the extracted baseband data by only a real number unit of the synchronous code data, and would have applied the Elezabi et al.'s multiplier 104 in Nowara's correlation step. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Elezabi et al.'s single-user decoder metrics for subtractive interference cancellation detectors in- code-division multiple-access (CDMA) communication systems with time dependence variance residual multiple-access interference (RMAI) in Nowara's waveform quality measuring method and apparatus with the motivation being to output of the multiplier as a real number y_k (col. 4, line 54).

Furthermore, Nowara in view of Elezabi et al. does not expressly disclose:

wherein a mobile station and base station are synchronized based on said synchronous position, the mobile station performing initial cell retrieval using a single filter based on said synchronization.

The applicant's admitted prior art (AAPA) discloses wherein a mobile station and base station are synchronized based on said synchronous position, the mobile station performing initial cell retrieval using a single filter based on said synchronization (figure 1, page 1, lines 1-12).

One skilled in the art would have recognized the wherein a mobile station and base station are synchronized based on said synchronous position, the mobile station performing initial cell retrieval using a single filter based on said synchronization, and would have applied the AAPA in Nowara's synchronization. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use the AAPA in Nowara's waveform quality measuring method and apparatus with the motivation being to provide the initial cell retrieval method (page 2, line 1).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to TOAN D. NGUYEN whose telephone number is (571)272-3153. The examiner can normally be reached on M-F (7:00AM-4:30PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on 571-272-7872. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/T. D. N./
Examiner, Art Unit 2416

/William Trost/
Supervisory Patent Examiner, Art Unit 2416